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Planting New Places.

THIS is the season when novices in planting, especially those who have recently acquired possession of suburban or country homes, are preparing to stock their grounds with ornamental trees and shrubs. The thought that thousands of new gardens are to be made would be a pleasant one, indeed, if there were any assurance that they would be well planned and planted; but the probabilities are that ninety-five out of every hundred of them will have no plan whatever, while the great majority of the trees and shrubs used in them will be selected without any adequate reason, and then badly planted in improper positions. This is a perfectly true statement and on its face it is discouraging enough. But the fact is that failure is the foundation of nearly all practical knowledge of gardening among amateurs, and the mistakes of this year will be an education for the next. When once a man or a woman either sets out in serious earnest to beautify the home-acre by planting trees and shrubs and flowering herbs, we may cherish a well-grounded hope that this is the beginning of an interest in gardening which will deepen with ensuing years and come to be at last an unfailing source of recreation and refreshment.

And yet if novices in the art of gardening would seek a little counsel at the outset and act upon it, their education would be much more rapid and much less expensive. They almost invariably begin at the wrong end, and gather their materials together first and then wander around their grounds in search of places to put them. The catalogues of the nurserymen offer to such persons a fascinating field of study. Naturally enough in these trade-lists plants of established merit are passed over with slight mention, for it is justly assumed that most buyers are informed as to their value. It is not surprising, therefore, that the novice, misled by the more circumstantial and perhaps a trifle over-colored description of the novelties and rarities and oddities among trees and shrubs, makes his selection largely from this class. The probabilities are that he will buy a great many more than are needed, and after he has crowded them all into his place, he will begin to realize that it has no consistent purpose, no unity of expression, no meaning.

It is not probable that any marked success would have been achieved, but certainly the outcome would not have been so utterly unsatisfying, if a careful plan of the grounds had first been made. Let the amateur planter at the very outset make an accurate diagram of his grounds, drawn to a certain scale, so that he can note the space covered by any given tree or shrub. Next let him attempt to form in his mind a clear and definite picture of his future home-scene—such a picture as he will be able to construct with the verdurous material at his command—grass, shrubs, trees, flowers and festooning vines. No tree or shrub will then be selected merely because it is pretty, but because it fits in with the rest to give outward and visible expression to his thought. To accomplish this the mental picture will need to be distinct and vivid. It must embrace the relation of the house to the grounds. It should preserve and frame in any attractive prospects beyond the boundaries of the place, and shut out of view what is unsightly or incongruous. It must provide for walks and out-buildings and a hundred conveniences for the household in such a way that they will not disturb the harmony and fair proportions of his picture. When such a design is perfected it will not be difficult to make an order for the nursery, for it will be known exactly how many trees and shrubs are needed, and an intelligent reason can be given why each particular one was selected for its chosen position.

But is it probable that the beginner will be able to make a design which shall be so reasonable, consistent and complete? Perhaps not. But an honest attempt to make one, for which he can give an intelligent explanation, will be a pretty good way to convince him of the genuine difficulties of the situation. One part of an education consists in finding out how much there is to learn; and the novice may discover, before his design is finished, that it requires real artistic feeling and training to make a perfect cabinet-picture on a half acre of ground, as truly as it does to plan a park. He will realize that there are adaptations and adjustments to be settled in the very framework of his design and all through its essential elements which demand experience and thought. He will more than suspect that he has made a mistake in attempting to solve, off-hand and while the buds are bursting, problems of such puzzling complexity that an artist with years of practice behind him would hesitate to undertake them without ample time for study. He may divine at last that even a work of this magnitude may present an opportunity for displaying a comprehensiveness of treatment, a refinement and felicity of touch which will worthily exemplify the supremacy of the hand of genius.

One who has been educated up to this point will begin to look about him for a landscape-gardener of recognized attainment, and, more than that, he will be prepared to appreciate his counsel and to follow his instructions with confidence.

THE popular interest in Arbor Day is steadily increasing if it is measured with any accuracy by the growing volume of literature on the subject. We have just received the "Arbor Day Manual," which is a stout octavo of 450 pages, and handsomely illustrated. It has been prepared by Mr. Charles R. Skinner, Deputy Superintendent of Public Schools for the State of New York, and it contains selections in poetry and prose on subjects relating to forests, trees, shrubs and flowers, together with songs set to appropriate music, and its declared purpose is to aid teachers in arranging programmes for the celebration of the festival. This is the most elaborate treatise we have seen, but in some other states the manuals are nearly as large, while in many others a modest pamphlet prepared by some public officer is deemed sufficient. In Colorado, for example, the Forest Commissioner, Mr. Edgar T. Ensign, has issued a circular

which confines itself to some practical suggestions relating to the transplanting and culture of trees, and excellent suggestions they are. Mr. Ensign tells those who are interested in the day what kinds of trees should be chosen for the different portions of the state, how they should be arranged on school-grounds for the best effect, how the transplanting should be done and how the trees should be cared for afterward.

Of course, the sentimental side of the celebration has its uses, and the cultivation of an affection for trees and of an appreciation of their beauty is an object worth striving for. But the love for trees will be no less when it is associated with a knowledge of what they require for wholesome growth. Arbor Day will prove most beneficial in those places where the trees are not forgotten as soon as the songs have been sung and the poetry recited. If the memorial trees have been properly selected and planted, the teacher will help to encourage a genuine regard for them if he explains to the young persons in his charge why the ground about them should be kept free from grass, why it is beneficial to stir the surface occasionally or to mulch it well. If it appears on the next annual recurrence of this festival that the trees planted this year have been neglected, robbed of food and moisture by grass and weeds, loosened by the wind, preyed upon by borers or other insects, this will prove that the celebration has been a mockery, and all the feasting and oratory and music wasted on a sham.

Notes on North American Trees. XVI.—A Question of Nomenclature.

A WIDELY distributed Xanthoxylum of tropical America, with a geographical range from Florida to Peru, was described by Linnæus in the "Species Plantarum," published in 1753, as *Schinus Fagara*. A few years later he recognized the fact that his genus Schinus could not contain this plant, which he named in the "Amœnitates" (v. 393), published in 1760, *Fagara Pterota*. The next botanist to impose a name upon the plant was Patrick Browne, who called it *Pterota subspinosa*, in his "Natural History of Jamaica," published in 1789. Willdenow, in his enumeration of the plants cultivated in the Berlin garden, published in 1809, gave it a new name, *Fagara lentiscifolia*, citing a manuscript name of Humboldt and Bonpland. Finally, Kunth recognized that this plant might be referred to the Linnæan genus Xanthoxylum, and published in 1823 in the "Nova Genera and Species" of Humboldt, Bonpland and Kunth (vi. 3), *Xanthoxylum Pterota*; but in referring this plant to Xanthoxylum, Kunth passed by the earliest specific name, *Fagara*, which had also been used as the generic name of the plant by Linnæus and by Willdenow, and took up the later name, *Pterota*.

Under the principle that the earliest Linnæan specific name should, when not preoccupied, be adopted as the specific name of a plant, which I have followed in the "Silva of North America," this plant, which is one of the commonest of the small trees of south Florida, and widely distributed through western Texas, should be known as *Xanthoxylum Fagara*.

This name of Fagara, as applied to our plant, is due, too, to a misunderstanding. The name Fagara, according to Avicenna, the famous Arabian physician, was in use among the early Arabians to designate an aromatic plant of which the name is now lost. It was afterward taken up by Clusius and the early European apothecaries, who designated, under the name of *Fagaræ majores*, the aromatic fruit of some eastern tree which is supposed to be the *Xanthoxylum Rhetsa* DC of India. Linnæus, in his "Materia Medica," published in 1749, where he first mentions our plant, appears to have supposed that it was the origin of the *Fagaræ* of commerce, and so used later, in the "Species Plantarum," the old Arabian Fagara as its specific name.

C. S. Sargent.

The Art of Gardening—An Historical Sketch.

XIX.—The Arabs in Spain.

IN no land did the Arabs (or the Moors, as we more often call them in this connection) rise to so great a height of wealth, cultivation and luxury as in Spain. "No nation," says Draper,* "has ever excelled the Spanish Arabs in the beauty and costliness of their pleasure-gardens. Retaining the love of their ancestors for the cooling effect of water in a hot climate, they spared no pains in the superfluity of fountains, hydraulic works and artificial lakes. . . . There were also menageries of foreign animals and aviaries of rare birds. . . . Among flowering shrubs there were winding walks, seats cut out of the rock, and crypt-like grottoes hewn in the living stone. . . . Not only did the artist try to please the eye . . . He also boasted of success in the gratification of the sense of smell by the studied succession of perfumes from beds of flowers." A recent writer,† speaking of the southern part of the peninsula, says that its gardens are survivals of the Moorish ideal of what a garden should be, modified by the requirements of country and climate. This ideal, in the hot, arid lands of the Arab's nativity, meant as much shade and coolness and moisture as could be obtained—thick bowers and vistas of foliage, plashing fountains, trickling rills and "creeping Roses and Jasmine to beget the perfume that his soul loves." In Spain so much shade was not needed and the gardens were made more open, yet shadowy foliage greatly predominated over sunlit spaces. Even in the days of the Renaissance, after the Moors had been expelled, many garden arrangements were but repetitions of their own, as, for instance, the very elaborate arabesques in oriental patterns which appear on a magnificent scale in the gardens of the Escurial, wrought with low clipped hedges of Box. "Another survival of Moorish times is the wall running by the garden-paths, hand-high, faced with painted tiles (*azulejos*), along whose top is scooped a deep furrow filled with garden-earth, and planted mostly with Carnations, Pinks and Gilliflowers, or the dwarf, sweet-scented Iris of Portugal. All these plants love the drought; and so set their flowers can be plucked or smelled without bending the back—an ingenious device of the ease-loving Oriental." Clipped hedges were frequently used by the Moors; but we read of no fantastically artificial shapes such as those that were beloved in ancient Rome and throughout Europe in the seventeenth century.

Every Moorish house had its court-yard, the original of the *patio* which is ubiquitous to-day in Spain. It was floored with stone or mosaics, openings being left for planting a few large trees. Smaller trees and shrubs stood about in pots with bright flowers growing around their roots. The walls were formed of simple loggias or fantastically rich arcades, according to the wealth of the proprietor, and arbors were constructed with vines upon a net-work of wire. A running spring occupied the centre, or, if water-power was available, a fountain took the place of the spring, and little holes were pierced in the pavement through which rose miniature jets. If a garden was connected with the house, it was regularly disposed with a multitude of canals and basins, broad, shadowy roads, and narrower paths overarched with flowers, trained on colored or gilded wire, leading to more open spaces where pattern-beds were planted with bright-hued flowers or arabesqued in Box. *Patios* were attached to the mosques as well as the houses, and an old Moorish example may still be seen near the cathedral of Seville.

The Moorish palace-garden was sometimes wholly formal in arrangement. The gardens of the Alcazar, near Seville, for instance, although greatly altered during Renaissance years, still preserve enough of their original character to be recognized as of Moorish origin, and they consist of numerous great square court-yards, divided from each other by walls and colonnades, like a succession of large *patios*.‡ But in other places we find royal gardens of a very different character, yet equally typical of Saracenic art—gardens which prove, indeed, that the charms of picturesqueness, mystery and variety were appreciated as well as those of balance and architectonic grandeur. The bold, varied character of the landscape in many parts of Spain, and its richness in contrasts between temperate and semi-tropical forms of vegetation, inspired the Spanish Arab to develop to the full that instinct for the wild, or seemingly wild, in gardening art, signs of which had already been displayed in Persia. Nothing could be less like the

* "Intellectual Development of Europe."

† Oswald Crawfurd, "Summer-time in Rural Portugal," *Fortnightly Review*, June, 1888.

‡ Jaeger: "Gartenkunst und Gaerten."

formality of his *patios* and smaller gardens than the outer pleasure-grounds of the Alhambra and the Generalif near Granada.

Granada lies in a ravine cut by the River Darro, and extends out into the plain at the foot of the Sierra Nevada. The Alhambra rears its rosy towers from one of the mountain spurs, and the road that approaches it winds up from the city gate by a steep picturesque ascent to the main gateway of the palace. Théophile Gautier* describes this road as cut through a lofty forest and bordered by rivulets curling close to the roots of the trees, while from every crevice in natural rock or artificial wall gushes a bubbling spring; and a more recent writer† speaks in similar words of the constant yet irregular way in which water is everywhere introduced—tiny water-falls shoot out unexpectedly from the sides of the cliff, "suddenly to disappear into a yawning underground conduit. All this work," he adds, "is entirely artificial, but is so completely in accord with its surroundings, so thoroughly artistic in thought, that it possesses the unstudied charm of nature's best examples. Altogether, the outer gardens of the Alhambra are as delightfully planned as entrances to a realm of fairy-land as could be imagined. The Moorish landscape-work and the picturesque mysteries of the palace are revealed little by little. There is no general vista, no all-embracing view, but the imagination is left to picture what is dimly revealed through the trees and across the fountains and under the wide arches, while, as in all Moorish work, the attention is held by half-disclosed attractions. This is the keynote of the whole arrangement—to awaken interest by unexpected surprises and half-concealed vistas." Naturally, the aspect of this approach to the Alhambra must be much wilder to-day than when it was laid out in the thirteenth century. Yet the landscape-gardener builds not for the hour, but for futurity; and the fact that his conception has here retained its charm while the passage of centuries has accented his first idea, is proof of consummate skill in the "art which conceals art."

From this picturesque approach the Alhambra enclosure is entered through a great gateway, in the thickness of which the path makes two sharp turns, emerging as a steep roadway flanked by high walls that conceal everything but the "Vermilion Towers" of the palace at the top. It ends on a broad, flat, open terrace (once very extensive, but now partly covered by a huge Renaissance palace built by Charles V.), which affords a magnificent view over the ravine below and the course of the Darro. The original design of the gardens which spread before the palace cannot be deciphered, but, says Mr. Blackall, "the large terrace, with quiet, shady avenues leading from it, was probably then, as now, the central feature of the scheme." The palace itself is so largely composed of a multitude of *patios*, filled with fountains and water-works of every kind, that, in Gautier's words, it seems, "like many other Moorish habitations, merely a big, decorated fountain."

New York. *M. G. Van Rensselaer.*

Plant Notes.

Two American Honeysuckles.

THERE has always been a great deal of confusion in gardens with regard to the identity of two climbing Honeysuckles of the Eastern States which are sometimes cultivated—*Lonicera flava* and *Lonicera Sullivantii*; and it is only in recent years that botanists have comprehended the differences which distinguish these plants and their geographical distribution. The figures, therefore, of the two species, which appear on pages 190 and 191 of this issue, will serve, perhaps, to facilitate their identification.

Lonicera flava is an old inhabitant of gardens. The earliest mention of this plant was published in 1802 in Drayton's "Views of South Carolina," where it was described as growing on Paris Mountain, a low, isolated elevation near Greenville, in that state. John Fraser, a Scotch botanical traveler and collector, visited this place afterward and sent or carried plants to England in 1810. No other botanist, so far as is known, has ever been on Paris Mountain, and *Lonicera flava*, although it has been reported as growing in upper Georgia, is only known now by the descendants of Fraser's plants, which have been kept in gardens, where, however, they are too rarely seen and are too little known; while wild specimens are one of the chief desiderata in herbaria of American plants.

Lonicera flava (Fig. 33) has twining stems growing to a height of ten or twelve feet, broadly oval leaves, the two or three upper pairs connate into a broad disk, and, like the stems, quite glabrous. The flowers, produced in short, simple, terminal clusters, open here in June. The corolla is bright orange-yellow, the slender tube longer than the limb and hirsute-pubescent on the upper part of the interior. The filaments and style are glabrous. The bright scarlet fruit is ovate and contracted at the apex into a short point.

Lonicera Sullivantii (Fig. 34) was first noticed more than fifty years ago by Mr. W. S. Sullivant, who found it in Ohio, and who suggested doubtfully in his "Catalogue of the Plants of Columbus" that it was an undescribed plant. It was confounded, however, with *Lonicera flava* as a variety in Torrey and Gray's "Flora of North America," and in all the editions of Gray's "Manual" except the last. Mr. Sullivant at the time of his discovery sent plants to the botanic garden of Harvard College, where it was propagated and quite generally distributed, but always under the name of *Lonicera flava*, and it is still almost always mistaken for that plant, which is extremely rare in gardens, being found now, so far as I have noticed, only in the garden of the Paris Museum and at Cambridge and in the Arboretum here; while *Lonicera Sullivantii* is not a rare plant in cultivation in eastern New England, where its large glaucous foliage is a familiar object in many country gardens.

Lonicera Sullivantii has feebly twining or sarmentose stems, rarely more than four or five feet long; and oval and obovate-oblong, thick, leathery leaves; those on the flowering stems are sessile and generally connate, the uppermost forming an orbicular disk. They become whitened, as do the stems, late in the season with a glaucous bloom, which makes this plant conspicuous and its recognition easy. The flowers are borne in elongated, loose, whorled clusters, often with a cluster in the axils of the second pair of leaves, and appear here at the same time as those of *L. flava*; they may be distinguished from the flowers of that species by their shorter corolla-tube, which is distinctly swollen or gibbous near the base, a little longer than the limb, pale yellow, marked with purple on the side exposed to the light. It is glabrous on the outer surface, and the filaments are glabrous or nearly so. The fruit is rather larger than that of *L. flava* and is nearly globular.

Lonicera Sullivantii is rather a widely distributed species, being found from central Ohio to Illinois, Wisconsin and the shores of Lake Winnipeg, and southward to central Tennessee. It has probably not extended much outside of New England as a cultivated plant; and if it exists in European gardens at all, it will probably be found under the name of *L. flava*.

These two species are handsome garden plants, especially *L. flava*. They are perfectly hardy and well worth cultivating, although their flowers are less fragrant than those of the English Woodbine (*L. Caprifolium*) or than those of the Japanese Honeysuckle. *C. S. S.*

Foreign Correspondence.

London Letter.

SOME plants of exceptional interest were exhibited at the meeting of the London Horticultural Society held at Westminster on March 25th. The Orchids call for attention first. A hybrid raised from *Cattleya Mossiæ* and *Lælia cinnabarina* was an object of special interest, both to botanists and horticulturists. It was labeled *Lælia-Cattleya hippolyta*. It has a slender pseudo-bulb four inches long, a leaf six inches long by one and a quarter inches in breadth, and a flower five inches in diameter, spreading as in *L. cinnabarina*, the sepals half an inch and the petals an inch wide, the labellum two inches long, narrow, tubular, crisped and wavy in front. Its color is a uniform tawny yellow of a pleasing shade. It was

*"Voyage en Espagne."

†C. H. Blackhall, Garden and Forest, i., 355.

exhibited by Messrs. James Veitch & Sons, who raised it. The only other hybrid raised in gardens, and of which *L. cinnabarina* is one of the parents, is *L. flammea*, a plant of somewhat similar character to the new one. *Dendrobium Wardianum*, Schroeder's variety, was remarkable for its large flowers and their deep color, the sepals being wholly rich amethyst, with a margin of white; the petals white, tipped with amethyst, as also was the lip. *Cattleya Trianæ Schroederi alba* is a white flowered fragrant variety of exquisite form and large in size; the lip is blotched with pale yellow. *Odontoglossum Leeanum* was represented by a large specimen bearing a stout, many-flowered spike. This is one of the best of the many forms of *O. odoratum*, its flowers being unusually large, bright and clear in colors, and prettily marked on the lip. *O. Sanderianum*, *O. Hebraicum* and *O. gloriosum* are its near allies. *Dendrobium nobile nobilius* was in its best form, a most gorgeous flower, with petals an inch broad and colored the richest glowing amethyst. Many plants which are called by this name have small claim to it. *Phajus Cooksoni* was again shown, its flowers this time showing a distinct yellow color on the under portion of the lip. *Angræcum sesquipedale* was shown with gigantic flowers fully nine inches across the segments, the spur measuring thirteen inches in length. *A. citratum giganteum*, a most elegant plant, bearing four spikes, each fifteen inches long, and the individual flowers an inch in diameter, or almost twice as large as the type. This is one of the most charming of the Angræcums. *Cœlogyne Cummingsii* is a rare species seldom seen in flower; it has erect scapes with medium sized white flowers, the deeply fringed crest colored yellow and brown. *C. pandurata*, the giant of the genus and a most remarkable Orchid in respect of color. Its flowers, which are fragrant, measure four inches across, and are borne about a dozen together on a stout, erect spike (Lindley says pendent), are colored pale pea-green, except the lip, which is yellowish green, warted and marked with large irregular blotches and veins of ink-like black. *Cyrtopodium Legerianum* was represented by two huge specimens bearing immense spikes, or rather sheaves, of yellow and brown flowers. Mr. Cummings, who grew these specimens, informed me that he has flowered them now three years in succession by growing them in pots partly submerged in a water-tank and feeding them liberally with Clay's manure all summer. During the winter they are placed in a vinery and kept dry. A wonderful example of *Oncidium sarcodes* bearing two spikes about eight feet long with many branches and crowded with flowers, revealed capabilities in this species not previously suspected. Spikes two feet in length have been considered good for this Oncidium.

Other noteworthy exhibits were *Epiphyllum Gærtneri*, a beautiful and distinct Cactus of great promise as a garden plant. *Hæmanthus multiflorus*, a tropical African species and one of the best of the genus as a stove-flowering plant; its scape, which precedes the leaves, is a foot high, and bears a globose head, nine inches through, of rich crimson flowers, which remain fresh a fortnight or more.

Cannell showed stands of his marvelous Pelargoniums and double Cinerarias. B. S. Williams sent a collection of Clivias of the best kinds. By the way, the writer of the note in Garden and Forest on Clivias was in error in stating that many hybrids had been raised from the species of this genus. As a matter of fact, there is only one hybrid, *C. cyrtanthiflora*, raised by Van Houtte about fifteen years ago from *C. miniata* and *C. nobilis*. The many named garden forms of Clivia are all seedling sports of *C. miniata*. A new and enlarged form of Lily-of-the-Valley was shown, its spikes a foot in length, and crowded with bells of large, well shaped flowers, the leaves also being unusually large.

Kew. *W. Watson.*

The Veitchian Nurseries.

CHELSEA, a suburb of London bordering the Thames on the Middlesex side, has always possessed famous gardens. The Botanic Garden of the Apothecaries' Society was founded here more than two hundred years ago, and for about a century and a half occupied as prominent a position in botany and horticulture as Kew does now. Ranelagh and Cremorne, the two favorite pleasure resorts of the wealthy of the last century, flourished here, Chelsea then being "a pretty village, two miles from London." It is very different now. The Botanic, or "Physic," garden remains, a withered cripple of its former self; the builder has long since taken possession of Ranelagh and Cremorne, and instead of being a pretty village, Chelsea is an enormous workshop, with a population considerably over a quarter of a million. Its famous gardens of the present time are nurseries, and the most famous, not only here but in the whole world, is the Royal Exotic Nursery of Messrs. James Veitch & Sons. Some account of an establishment which for over half a century has exercised a very great influence on the development of English horticulture, and has a staff of over 400 employees, will probably interest American readers.

It is customary to speak of the nurseryman as a mere tradesman, whose sole object is to make money out of horticulture. This may be true of the majority, but there are and always have been in England nurserymen who have taken a leading part in all movements for the advancement of horticulture from pure love of the work. By forming magnificent collections of plants of all kinds, both ornamental and useful, and by showing that they may be successfully and easily grown in a garden, these nurserymen have contributed more, perhaps, than any other body of men or institution to foster a love of horticulture among the people of this country. The names of Switzer, Lee, Abercrombie, Loddiges, Backhouse, Rivers and Veitch will always be placed amongst those to whom horticulture owes most.

The Royal Exotic Nursery, Chelsea, was established in 1814 by Knight & Perry. From its commencement it has held a foremost rank amongst the nurseries devoted to the introduction and cultivation of new plants. In 1853 an advertisement in the *Gardeners' Chronicle* announced that this nursery had become the property of James Veitch & Sons, of Exeter. The nursery at Exeter was conducted by the father and grandfather of James Veitch, and it had been for many years one of the principal nurseries in England in the days when Loddiges, at Hackney, and Rollison, at Tooting, were in full swing. The young James Veitch was apprenticed to Rollison, with whom he acquired that taste for and love of exotic plants, and especially of Orchids, which was of so much service to him at Chelsea.

It appears that the grandson was the sole owner of the newly acquired Chelsea nursery, the partnership with his father being only in regard to new plants which they conjointly introduced and shared. Collectors were despatched to America and the East, amongst them being the brothers Lobb, Pearce, Hutton, and Mr. Veitch's son, John Gould, who went to Japan and the South Pacific. The many beautiful and interesting plants that were thus obtained enriched horticulture as it had never been enriched before, with all kinds of conifers, including the Sequoia, Acers, Orchids, Nepenthes, Begonias, Liliums, *Berberis Darwinii* and others.

In 1869 James Veitch died, the connection with Exeter was severed, and the management of the business devolved on the three sons, Harry J., John Gould and Arthur. The father was a man of remarkable energy, clear-headed, a most skillful cultivator and a true son of Adam. It was said of him that "a quick temper and impatience of opposition were natural adjuncts to a character such as his; but at the same time there was thorough conscientiousness and straightforwardness, a disgust for all semblance even of meanness or underhandedness." In the following year John Gould died at the age of thirty-one, and in 1880 Arthur also died, leaving the business to be managed by Mr. H. J. Veitch. Two of his nephews have lately joined him in the management. The development of the nursery and the amount of important work done in connection with it during the last ten years have been most remarkable. In the introduction of new plants; in cross-breeding Orchids, Rhododendrons, Begonias, Hippeastrums, hardy flowers and vegetables and in the superior cultivation of almost every class of plant, Messrs. Veitch occupy the premier position among English nurserymen. Besides all this, the publication of their most useful "Manual of Coniferæ" in 1881, of the classical and scientific "Orchid Manual" now in course of publication; the numerous papers prepared for the Linnæan and Royal Horticultural Societies, are evidences of a zeal in the cause of horticulture, a desire to help forward the science and the art, of more than an ordinary kind. Messrs. Veitch may be "making a fat thing" of their nursery work, but they are also doing a great deal more than most people to make gardening easy and delightful as well as remunerative.

The Chelsea nursery is only five and a half acres in extent, but it is almost wholly covered by 110 glass houses, many of them large. The entrance is through a long, lofty glass corridor banked with Ferns, Palms and other foliage plants, the whole of the roof being covered with red and white Lapagerias. On the right is the suite of offices, where a staff of twenty clerks is employed. On the left of the corridor are the large seed and bulb warehouses, an enormous business being done in this department. The corridor is terminated by a high house in which a collection of Tree Ferns, Cycads and large Palms are kept. From this the visitor may turn to the left and walk

through house after house filled with *Araucaria excelsa* (here first propagated with success by the late Mr. Court, one of the cleverest propagators we have ever had), Ferns of every sort, large Todeas and other filmy fronded kinds; big and little Adeantums, Davallias, Aspleniums, and in smaller houses all sorts of secrets in the shape of new kinds, which one may look at but not write about. Then we pass into a house or rather a pretty rockery covered with Ferns and protected by a glass roof. This house, delightful as a grotto in summer, is a kind of anteroom to the Orchid-houses. There are twenty-five of these, every one crammed full of plants, big specimens, pigmies, rare hybrids, new introductions, popular favorites, all elbowing each other and fat with health and happiness. Two houses filled with specimen Cypripediums, another with Vandas and Aerides, another with Phalænopses and so on. The Odontoglossums make a brave show just now and amongst them are many gems of the cool house; Sophronites forming brilliant patches of scarlet; *Odontoglossum Humeanum*, *O. Edwardii*, *O. nebulosum* and *Oncidium Phalænopsis* being conspicuous among the rest. The Cattleya-house, 132 feet long, twenty-two feet wide and fourteen feet high, contains thousands upon thousands of plants, some large specimens a yard across, others quite small, but all full of plump flower-sheaths of great promise for the blaze they always make in May and June. There are sixteen rows of four-inch pipes in this house, which is heated by an eight-foot Trentham boiler. Two broad lean-to houses have their roofs swarming with all sorts of Dendrobiums in baskets; and now we are in the show house for Orchids. It is about thirty feet square and twelve feet high, without any staging, the sides being built up of cork and stone and the middle occupied by a large irregular mass of the same material surrounding a cascade and tank. Pockets are cunningly made for the reception of the pots containing the plants, the cork and stone is more or less clothed with creeping Ficus, Selaginella and similar plants. The effect is particularly natural in appearance and pleasing. At the time of my visit the plants in flower in this house were Epidendrums of various kinds: *Cœlogyne Massangeana*, *Cymbidium Lowianum* and *C. Devonianum*, a white Lycaste with gigantic flowers seven inches across; *L. fulvescens*, with forty of its large, tawny, yellow flowers; *Phajus tuberculosus*, *Dendrobium Cambridgeanum*, *D. Wardianum*, *D. Farmeri*, the white *Cœlogyne cristata* and many others. The Nepenthes-house is fifty feet long and contains a magnificent display of pitchers, Messrs. Veitch having been exceptionally successful in the cultivation of these plants from the first. *N. Rajah*, *N. Dicksoniana*, *N. Mastersii*, *N. Morganiæ* were in glorious form. Then we enter a house filled with *Anthurium Scherzerianum*, grand examples of good cultivation. A similar house is filled with Clivias in flower. The specimen greenhouse Rhododendrons fill three houses, whilst in smaller and propagating houses there are hundreds of thousands of these plants, from the tiny seedlings just hatched to the latest flowered of the new hybrids. The first hybrids were raised at Exeter some thirty-five years ago, but the best of those now known have been obtained since 1877.

In the houses devoted to new plants there are numerous new introductions from all parts of the world undergoing operations by Mr. Heale, the clever propagator and hybridizer, but of these I must not now write. *Lapageria alba* has a house to itself. Numerous specimens are planted in a peat bed twenty-five by ten feet. The shoots of this are led by strings up to the roof. These when ripe will be laid flat on the soil and covered with an inch or so of sandy peat. The result will be that hundreds of shoots will be pushed up, and these when rooted will be lifted and potted separately. By this ingenious method of layering an abundant stock of this popular greenhouse climber is obtained.

Another propagating house is filled with seedlings of all kinds: Clivias, Streptocarpus, Begonias, Cacti, Rhododendrons, including those wonderful Yunnan species, the introduction of which, unless report and dried specimens speak falsely, is an event of more than ordinary importance.

Hippeastrums fill a house sixty-five by eighteen feet, and the two thousand spikes they now bear present a wondrous array of brilliant colors and huge flowers. The popularity of these plants is shown by the enormous number sold from this nursery alone, which is something like two thousand every year. A hundred of Messrs. Veitch's seedling Hippeastrums have been certificated. Seedlings flower at the age of three years, and probably remain healthy till they are ten years old.

A pretty conservatory always filled with the flowers of the season is useful as a kind of sample-room. Parallel with it is a group of ten houses placed side by side; opposite to them, on the other side of the central path, being a similar group. Ten of these long, low houses are filled with healthy young stock of hard wooded plants, such as Boronias, Aphelexis, Eriostemons, Ericas, Correas, Pimelias, Epacris; Climbers of all kinds; young Azaleas, and so on. It is a long business to "do" the whole of these houses, interesting though the contents of every one undoubtedly are. The other ten of these useful structures contain stove plants of all kinds. A Palm-house crammed with large specimen Kentias, Cocoses and other decorative kinds; then follow three large houses of Camellias; another is filled with specimen Aralias; five others are devoted to the growing of pot-vines, of which Messrs. Veitch grow 4,500 every year, and even these do not supply the demand. A corridor leading to the high road contains magnificent specimens of Camellia, all in flower. The propagating houses teem with myriads of baby plants of every kind. New Nepenthes are here cared for and multiplied. Here, too, are young plants of the interesting *Heliamphora nutans*, cousin to the Sarracenias, and till lately shut up on the top of the Roraima Mountain.

About a dozen long houses contain soft-wooded plants, such as Bouvardias, Pelargoniums, Fuchsias, Cyclamens, Carnations, etc. Then there are frames innumerable, beds filled with Carnations, which grow well at Chelsea in spite of the poison of its fogs and smoke. The keep of this nursery is most admirable. "A place for everything and everything in its place" is the motto here.

I have omitted to mention the breeding houses for Orchids so ably presided over by Mr. Seden, because they, or rather their contents, have been taken to a branch nursery at Slough, near Windsor. Messrs. Veitch have also branch nurseries at Fulham, at Chiswick and at Coombe. These, however, can be dealt with in another letter. It is needless to say that Americans interested in horticulture are always welcomed at the Veitchian nurseries, where they can see as much perhaps in a short time of exotic garden-plants as anywhere in the world.

London. *Visitor.*

Cultural Department

Some Adaptations in the Strawberry.

THE Rose family has shown remarkable power to keep pace with the human family, and its adaptability to our needs and moods is one of its peculiarities, especially in the case of the small-fruits. The Strawberry has of late done a good deal in the way of adjusting itself to cultivation. Two years ago I received some plants of the Haverlands, and was astounded to find the roots a foot long in some cases. One trouble with our Strawberry-beds has always been a tendency to heave out with frost. But it seems now very probable that we shall develop plants with such a strong hold on the soil that heaving will be rare. It occurred to me that these Haverlands had put all their energy to roots and would show poor fruiting power; but experiment proved that the contrary was true: the plants were very prolific bearers of very large berries of excellent quality. Since receiving the Haverland I have found that several more of the newer sorts are developing the same tendency to extraordinarily long roots. Viola and Crawford are two fair samples of root evolution. Tippecanoe is said to have extremely long and massy roots, but I have not yet tried it. Clearly, it is along the line of root improvement that selection should take place as well as along the line of fruit enlargement. But the development of large fruit is, of course, what catches the popular eye and meets the consumer's desire. Those of us who remember the introduction of the Wilson and Hovey have in mind a remarkable history. We have gone on from the field berry until now a well cultivated bed of Sharpless, Bubach, Summit, Ontario, Haverland or Crawfords will give us thirty to a quart. So far as size of fruit is concerned we have gone quite far enough. The point now is to eliminate the inferior sorts. New applicants for favor need not recommend themselves on the score of being larger than a half dozen of the leading sorts already disseminated.

The three points to consider hereafter are quality and form and color. Crescent is, perhaps, the ideal in color, but apart from its ability to produce bushels of sour berries, averaging small, it has no claim on us. The Wilson has slowly been discarded, as we discarded the old Bouchretien Pear. No sour berry or one of inferior flavor will hold its place with consumers. The public taste has been educated to the standard of the Seckel Pear. Form, also, must be considered, until we can dispense with Sharpless and other irregular and coxcomb sorts. Cumberland is an ideal in form, but lacks somewhat

in substance; it is not a good carrying berry. For quality we have nothing quite to equal Lennig's White, or to surpass Prince of Berries after that; but the first of these yields a very thin crop, and the second is not profitable as a cropper, nor has it sufficient foliage and stem. The Crawford comes as near as any that I have seen to cover all demands as to quality and form and color. I have not grown it, and cannot speak for its roots. Haverland is an ideal berry, except that it lacks the very highest flavor.

I do not anticipate any startling progress in the Strawberry hereafter. We shall probably collect into a few sorts the fine points now rather scattered among many, and then content ourselves with what has been accomplished. The last half century history of this plant and of fruit adaptation make a charming chapter in the general story of the relation and co-operation of the human family and the Rose family.

Clinton, N. Y. *E. P. Powell.*

[Is it not probable that longer roots in new varieties have been developed by high culture in deeply worked soil?—Ed.]

Fig. 33.—Lonicera flava.—See page 187.

Good Plants for the Greenhouse.

Drymonia Turialvœ.—Among the many handsome and interesting plants belonging to the *Gesneraceæ* this one deserves a prominent place, for, when well grown, it makes a very attractive specimen, and is of such dimensions that room can be made for it in small collections. This Drymonia is not a new plant, but it is so rarely seen that it would easily pass for a novelty in many establishments. It has opposite, ovate, heavily veined leaves from one foot to fifteen inches in length, and broad in proportion, with their upper surface of a peculiar silvery gray tint, while their under surface is a dull purplish red. The flowers are axillary, creamy white, tubular, with fimbriated edges, produced on short stems, and, while ornamental in themselves, are borne so freely as to interfere in a measure with the size of the foliage if allowed to remain on the plant. It is, therefore, best to pinch out the flowers as they appear if the plant is to be used especially for the effect of its foliage.

Drymonia Turialvæ is a native of South America and is an easy subject to grow, its chief requirements being a warm shaded house and plenty of water, and almost any light, rich soil. It should be allowed ample pot-room, or the foliage will not attain its full size, though a good plant may be grown in an eight or ten-inch pot. It is propagated by cuttings, which may readily be procured by heading it back so as to induce the side-shoots to break, or the plant may be cut up into single eyes—either method being successful. In fact, the Drymonias, in common with many others of the *Gesneraceæ*, will root from leaves, though it may take a considerable time before the rooted leaf will form an eye at its base from which to send forth a shoot.

Tapeinotes bicolor.—This is another interesting Gesneraceous plant which is also a native of some parts of South America, notably of Brazil. It is, perhaps, the best species of a small genus which is nearly related to Nematanthus, and it has small tubular white flowers, the tube being of peculiar shape and produced from the axils of the leaves. The leaves are rather glossy and olive-green in color, and the entire plant is more or less hairy. *Tapeinotes bicolor* is also very easily increased by cuttings, and requires similar treatment to that recommended for the Drymonia in regard to heat, shade and moisture. It is, however, much smaller than the preceding, and does not require so much pot-room in proportion to its size. It will also be found more satisfactory to grow either of the above mentioned plants from young stock each season, as they are of rapid growth and soon attain their best condition.

Streptocarpus.—In the extensive family of *Gesneraceæ* are to be found many peculiar plants, and in the latter category may certainly be placed the genus under consideration. Probably the most prominent species of this odd genus is *Streptocarpus Saundersii*, which has the strange habit of producing but one leaf, which is dark green on the upper surface and

reddish beneath, somewhat tomentose, and a foot or more in length. From the base of this solitary leaf rise the flower-spikes, bearing large panicles of lavender-colored flowers, the individual flowers not being very large but showy in the mass. A smaller species than the above, and also very pretty, is *S. Rhexii*, which flowers in much the same manner and profusion as *S. Saundersii*, but produces a pair of leaves instead of the solitary one of the latter.

All the species of Streptocarpus are multiplied by seeds, and may be grown in an intermediate house, where the temperature is kept at about fifty degrees. They should be potted in light loam in well drained pots or pans, and if a number of plants are placed in a pan, so as to form a mass, they make an effective group and produce a succession of bloom for a considerable time. They enjoy a plentiful supply of water, but it should be so applied that the foliage is wet as little as possible, for the leaves are liable to damp off if watered overhead.

The Streptocarpus is native of South Africa, and although the above mentioned species have been in cultivation for many years, they are seldom seen in American collections. And yet they are more worthy of cultivation, both on account of their oddity and beauty, than many plants which are much more common.

Holmesburg, Pa. *W. H. Taplin.*

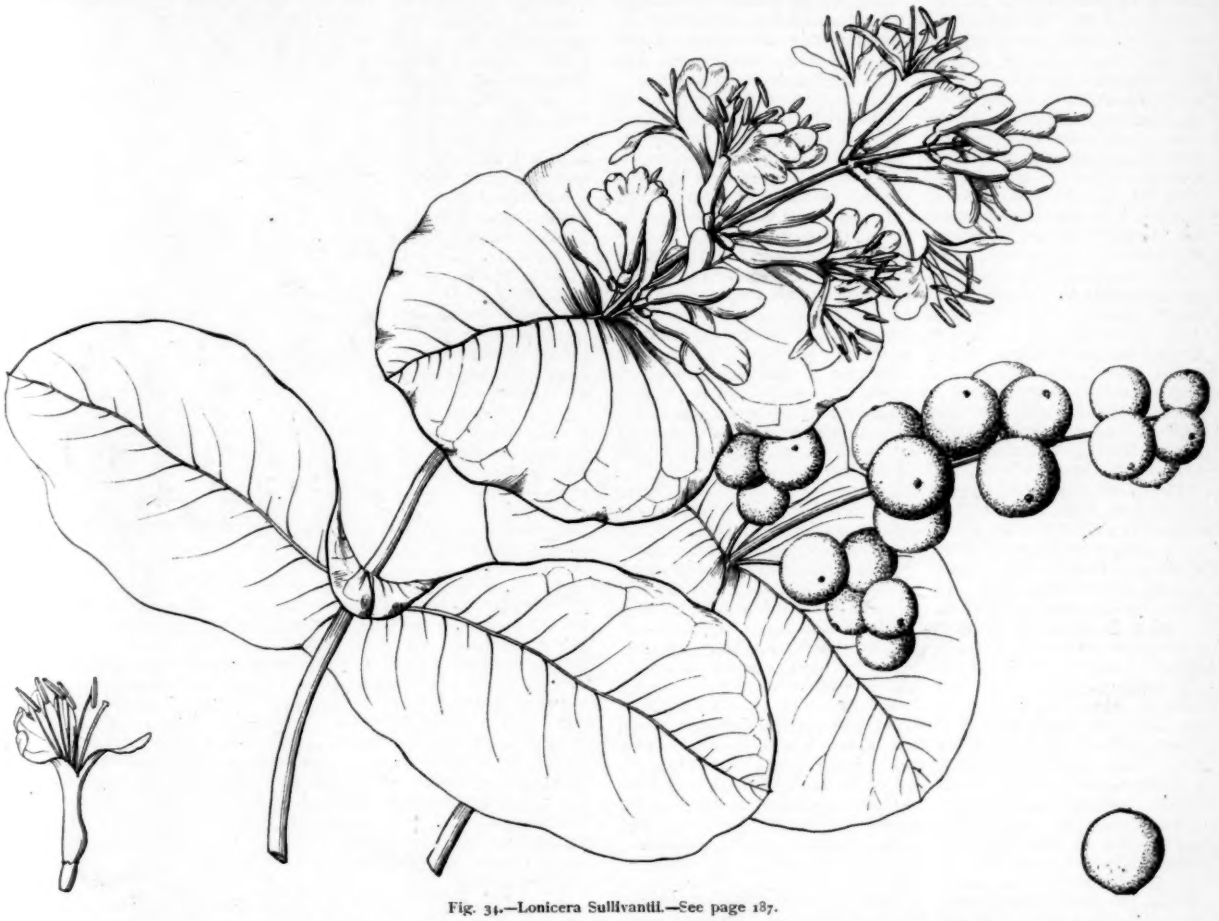

Fig. 34.—Lonicera Sullivantii.—See page 187.

Pentstemons for the Garden.

THE genus Pentstemon is an extensive, and, with one exception, a peculiarly North American one, many species being desirable plants for the hardy-flower border, while others are showy but not hardy here in the Eastern States, and others again are of botanical interest only. One of the great charms of the English flower border in the summer months is the beautiful race of florists' varieties of Pentstemons, and it is much to be regretted that these are not suitable for cultivation here, being too tender to withstand our winters. This is, also, unfortunately true of some of the best western species.

Pentstemons seem to thrive best in a light, rich soil, in the open border, and in such a position all are perennial. *P. grandiflorus* is one of the showiest we have grown. It has spikes of pretty bluish lilac flowers and grows about two feet high. It has glaucous foliage, seeds freely, and self-sown plants produce better flowers than old ones. There is a variety of *P. grandiflorus* with dark purple flowers which is distinct and desirable. It seems constant, having come true from seed, and bids fair to be a popular plant. *P. Cobæa* has, perhaps, larger flowers than the last, and these bear a striking resemblance to the old *Cobæa Scandens* of greenhouses, with its purple, white striped flowers. The variety of *P. Cobæa* known as Purpurea has much darker flowers and is quite distinct. This may also be easily raised from seed. *P. ovatus* is a species with pretty bright blue flowers, which change to purple, and though in this species the flowers are smaller than in those named above, they are much more abundant. This plant is best propagated by cuttings taken in fall and wintered in pots in a cold frame. *P. diffusus* is a species of dwarf branching habit and pretty blue flowers borne in great abundance. This plant is liable to be injured in severe winters, but does well with a little protection. *P. pruinosus* is a rare species also of branching habit and bright blue flowers on stems two feet high. These two last species are also best propagated from cuttings. *P. barbatus*, var., is one of *Torreyi*, the best known in gardens and deservedly so. Its tall panicles of brilliant scarlet flowers often grow five feet high, and last in bloom all through summer. It is easily propagated by division. *P. lævigatus*, var. *Digitalis*, is a good garden plant with showy spikes of white flowers which last a long time in bloom. This plant has a more eastern range than any of the preceding, and has a robust constitution. There are many other fine species of Pentstemon which would be desirable acquisitions to gardens if they would prove hardy, and of these may be mentioned *P. Hartwegi*, *P. Eatoni*, *P. centranthifolius*,

P. spectabilis and *P. puniceus*, the two last being among Dr. Thurber's discoveries. We should be glad to hear of living plants of these last. *E. O. Orpet.*

Passaic, N. J.

The Spring Garden.

THE Chionodoxas, popularly known as "the Glory of the Snow," a free translation of the botanical name, are among the most valuable additions of recent years to the spring garden. As the name implies, the plants are supposed to bloom in the melting snows, and, in fact, follow closely the blooming of the Snowdrops.

C. Luciliæ was introduced about a decade ago and immediately excited attention by its brightness and beauty, and has evidently taken a permanent place in gardens. As it has been widely distributed by the trade, this variety is probably now very well known by most fanciers of hardy flowers, though possibly many have yet to discover its beauty when grown in liberal breadths. Like many of the small spring flowering plants they should be planted in masses, and even then they require a year or two to produce a satisfactory effect. *C. Luciliæ* is found in Asia Minor only, as far as known on the Nymph Dagh Range, near Smyrna; it is a free-growing variety with one or more scapes, furnished with from two to six erect flowers with narrow white petals, tipped bright blue of the clearest shade—altogether a beautiful addition to any border. The flowers are variable in size, but in good examples are over an inch in diameter. There will be found, also, a difference in the shades of blue in the tips. Sometimes, though rarely, pure white and rose sports are found. The former of these is a lovely pure flower, and would be a valuable plant in the border could stock be had. The rose-colored sports are tinted with blue, a color not entirely pleasing. My stock of these was grown in a pan in a cold frame, which may partly account for their not being with me, at least, as strong as the parent plants.

C. Sardensis was found a few years since on the Mahmoud Dagh Range in sight of the plain of Sardis. This flower has a small white eye and the deep blue of the outer color of *Scilla Siberica*. My colony came into bloom in February and seemed to be much affected by the bad weather, so that, possibly, the newly planted bulbs may not have done their best; but, so far as I can judge, the color effect of *S. Siberica* is superior in this shade to *C. Sardensis*.

C. gigantea is a later collection from the Tmolus Range, and a very distinct, pleasing flower. The color is rather on the light violet-blue shade, with lines of darker blue. My corms are small, and flowers, perhaps, not at their best in size; but I should rate it as next to *C. Luciliæ* and worthy of a place among the best flowers. This variety was latest in blooming.

C. Tmolusi is the latest variety collected by Mr. Whittall, but which I have not yet seen. It is described as a magnified *C. Luciliæ*, with a deeper tint on the petals. From the collector's description it is possible that this variety is too near *C. Luciliæ*, which is rather variable in size and coloring, to be considered a distinct variety. It has been collected in a different station; but when the two are cultivated together it will probably be found that the resemblance is too close to entitle them to separate names, for garden purposes at least.

C. Cretensis was the earliest Chionodoxa to bloom; but its value does not seem very great, though the waving scapes, covered with the whitish flowers, are rather graceful, and appeared when flowers were rather scarce. *J. W. Gerard.*

Elizabeth, N. J.

THE Dwarf White Trillium (*Trillium nivale*) is a charming little plant when well established. It comes into bloom as early as the earliest, lasts for several days, and the honey-bees swarm about the beds where it is planted as soon as the weather is warm enough for them to fly. The average height of the plant is only about three inches. It bears a single white flower an inch or more across. The three leaves, which are borne in a whorl half an inch or more below the flower, are of a waxen green, with a purplish tinge, and add much to the value of the plant. This species is not a native of New England, but is common in some parts of Ohio, Illinois and Wisconsin. It needs a fine loamy soil, with a thin shade. It should be planted in early autumn or midsummer in order to become well established before winter.

A variety of the White Dog's-tooth Violet (*Erythronium albidum*, var. *coloratum*), from Texas, now in flower, is the earliest we have seen of this genus. It is perfectly hardy, a strong grower, and, after it is established, a free bloomer. The flowers are about the size of those of the typical species, but instead of being white are of a pinkish purple tinge, and very pretty. It is a newly-discovered variety and well worth growing.

Chionodoxa Luciliæ and *C. Sardensis* are in bloom, and on account of hardiness and earliness are very desirable. In order to do well, they, too, should be planted in early autumn or midsummer. It is better to plant these early-flowering kinds as soon as they have seeded, as they are sure to bloom earlier the following spring than if not set until October. We have noted this difference in beds of Trilliums of the same kind, when some were planted early and others later. Those which were set in midsummer were a week or more in advance of the later ones. *F. H. Horsford.*

Southwick, Mass.

Insecticides for Window Plants.

IT frequently happens that, despite the greatest care, insects, more especially plant lice (Aphides), will find their way into window gardens and small conservatories, sometimes seriously marring the beauty of the plants, and even of the flowers. The insecticides and methods of application recommended for destroying these pests on a large scale are often not applicable to these small gardens, which yet frequently suffer much more seriously from insect attack than do outdoor plants. Caterpillars of larger lepidoptera rarely get at these plants, and where they do hand picking is the best remedy. The little leaf rollers are much more apt to be found, and, when observed, are also most easily disposed of by being crushed in their habitations. Beetles that visit the flowers rarely do any damage, and their larvæ, where they are plant feeders, are amenable to the same treatment adopted against plant lice. These latter, and sometimes the little jumping plant bugs, are the most usual pests on house and conservatory plants. They cluster on the leaves, often causing them to curl, to become dry, brown and unsightly; on stems, causing them to become hard and woody, and on flower-buds, causing them to become aborted or to produce crippled and imperfect flowers.

In my experience, Pyrethrum and Tobacco, properly used, have both been found very effective in ridding the plants of all insects infesting them. My preference is in all cases the dry powder, applied pure and with a bellows that will enable it to be put on rapidly and evenly. It is essential to the entire success of these substances that they be very finely ground, and in this respect I have found the Persian and Dalmatian powders much more satisfactory than the Buhach or California grown Pyrethrum. The Tobacco powder should also be very fine and very dry—as near a dust as it is possible to get. In this shape I have seen it in a very few minutes clear several large Rose-bushes of their enemies. Another, and perhaps more economical and about equally effective, way of using these substances is in the form of a decoction, using one ounce of Pyrethrum or Tobacco to a pint of water. Steep as in making tea and allow it to draw well. The Pyrethrum must be kept in a tight vessel, while the Tobacco infusion loses nothing by exposure. Apply with an atomizer, such as is obtainable in all drug stores, straining the liquid before putting into the bottle for application. Both substances are almost immediately effective—the fine spray reaching everywhere, and adhering to the insects where larger drops would be shed and ineffective. The Tobacco infusion could be prepared and an atomizer kept charged near at hand, so that at the first sign of insects it could be applied. In this way house plants and small conservatories can be easily kept free from insect injury of nearly all kinds. *John B. Smith.*

Rutgers College.

Chrysanthemum maximum should be found in every hardy-plant border. It is a magnificent plant after midsummer, beautiful in the border, and valuable for cutting at the very hottest season of the year. *Pyrethrum uliginosum* so much resembles a Chrysanthemum that it may well be classed with the above. It flowers late in September and lasts three weeks or more. The plants are larger than those of *C. maximum*, and they "break" like garden Chrysanthemums, making bushes three or more feet high and of proportionate breadth literally covered with flowers in their season. These flowers are not so large as those of *C. maximum*, but they are considerably larger than Ox-eye Daisies or Marguerites, which they resemble in other respects. The Pyrethrum is perfectly hardy and thrives under ordinary treatment. *John Thorpe.*

Pearl River, N. Y.

Seasonable Hints.—For successful gardening it is quite as essential to know what to avoid as to know what to do, and it is particularly important to know just when to do it. The careful cultivator keeps a diary of operations for each year with an

accurate account of what was done at every date and the general weather conditions at the time, and to this he adds as the season progresses notes relating to the success or failure of crops and the apparent reasons for both. Every one who has an interest in a garden should begin a diary of this sort if this has not already been his practice. A fertile soil in good mechanical condition is the foundation of all success. If manure has not already been provided it will not do to hurry to the nearest stable and buy a supply, for it will be of little use in a garden until thoroughly decomposed so that when it is put on the soil it will be dark colored and without a trace of straw. If the ground has been well enriched in former years bone-meal, guano and chemical fertilizers are of great advantage, but these should be used only as adjuncts to well rotted stable manure. Do not begin to dig or plow while the soil is still wet. The ground should never be disturbed until in such a condition that it will easily pulverize; and when it has been plowed or spaded tender vegetable seeds like those of Cucumbers, Melons, Lima Beans, Okra, Tomatoes or Corn should not be planted in the open ground until warm weather has permanently come, which will not be in this latitude until about the 20th of May. Other vegetables should be planted as soon as possible and the earliest peas should already be in the ground. The American Wonder is the best of the dwarf Peas for family use, but there are some places where this variety refuses to grow. The little round peas should never have a place in the home garden. Of the wrinkled varieties Alpha is among the earliest and is of excellent quality. It is a good plan to make one planting of Alpha as soon as the frost is out of the ground, and then a fortnight later to plant at the same time Alpha and some second early like McLean's Premium Gem, Stratagem for later, and Champion of England for the main crop, and these will follow each other in due succession. The season can be prolonged by later plantings of Champion of England. The seed of Beets, Cabbage, Cauliflower, Parsley, Lettuce, Onions, Parsnips, Spinach, together with the roots of Asparagus, Rhubarb and Horse Radish, should be placed in the ground as early as it can be worked. Tenderer plants like Peppers and Egg Plant, which have been sown under glass, should be looked after and thinned out; they need plenty of room and ventilation on warm days so that they can be hardened. Damping off, owing to the excessive moisture and cloudiness this spring, has been a source of great annoyance. The only remedy for this is abundant ventilation and keeping the soil as dry as is consistent with safety. A sprinkling of clean, dry sand over the soil when the trouble first shows itself is beneficial. The covering should be removed from Rhubarb, Asparagus and Spinach and if the soil is dry enough light cultivation should be given to the surface.

The Flower Border.—Hardy herbaceous plants should be now set out, and so should dormant Roses and other shrubs. Beds of Pansies, Daisies, Forget-me-nots, Auriculas, etc., should be planted out now and they will be in their glory for a month or more. Seed of Sweet Peas, Alyssum, Asters, Candytuft, Larkspur, Poppies, Gaillardias, Coreopsis, Sweet William and the whole range of the hardier flowers can be now sown. Care should be taken to have the ground in fine condition and that the seeds are not buried too deeply. Seeds of the tenderer plants, if sown in the open ground now, will either rot, or if they do come up will make but feeble growth.

Bergen, N. J. *P. O.*

Recent Publications.

The Forests of North America.—I.

Die Waldungen von Nordamerika, ihre Holzarten, deren Anbaufähigkeit und förstlicher Werth fur Europa im Allgemeinen und Deutschland insbesonders. Von Dr. Heinrich Mayr. M. Rieger, München, 1890 (New York, Steiger & Co., 25 Park Place).

As the sub-title of Dr. Mayr's "Forests of North America" shows, his chief concern in studying our trees was to estimate their probable utility for economic planting in Europe, and especially in Germany. The author's first journey in this country was undertaken by order of the Bavarian Government, while he held the position of *Privat-docent* at the University of Munich. The second time he visited our forests he was on his way to Japan to assume the position, which he now holds, of Professor of Silviculture at the University of Tokio. His book, which was written in Japan, is primarily an official report in the interests of the industries of his fatherland. But, with German thoroughness, he has exhaustively discussed his subject from other points of view as well as from the chief one, and in many respects the work is the most important which has yet been published on the forests of our country. It is the first which has embodied the observations and conclusions of a scientific forester, trained in all the knowledge of the schools as well as by personal experience in European woodlands, and able to take a point of view at once thoroughly scientific, and, in the best sense of the word, thoroughly practical. In the brief space here at command it is, of course, impossible really to review such a book. Each page as it is turned seems of special importance; there is no chapter to which justice could be done by a short summary; there is more than one of which the value depends upon its fullness of detail, its wealth of illustrative facts; and when the would-be reviewer has carefully read the volume his conclusion is that only a translator could fully explain its excellence and significance. So earnest is the author's interest, as a friend of our people, in the forests upon which our prosperity largely depends, and so conscientiously and wisely has he pointed out what should be done for their preservation, that he well deserves the honor of a translation. Meanwhile all that can here be done is to give a brief indication of the character and arrangement of the volume, together with a promise that, from time to time, its most interesting portions shall be placed before our readers.

It is a large and well printed octavo of 450 pages, with twenty-four pictures in the text, and ten separate plates, a map showing the different zones of vegetation in North America, and a chart giving geographical sections, for comparative use, of the North American, the Asiatic and the European continents. Two of the plates show the leaves and fruit of various North American Oaks, three the leaves and fruit of a number of other deciduous trees, one the fruit and foliage of conifers, two the seeds of conifers, one the anatomical structure of the wood of certain conifers, and one a number of the fungi which afflict our trees.

In the preface Dr. Mayr briefly tells of the inception of his task and the way in which it was prosecuted, renders hearty thanks to all who in this country gave him practical or scientific help, and outlines the scheme of his book. The text proper begins with a discussion of the conditions under which forests exist and general remarks upon forest-flora; and the forests of North America are then described and discussed under different headings. These are: (I.) The General Condition of the North American Forests; (II.) The Size and Divisions of the Forests; (III.) The Products of the Forests; (IV.) The Growth and Quality of North American Forest-trees; (V.) Changes in Forest-Vegetation through the Action of Man; (VI.) Forestry Efforts in North America; (VII.) A Special Consideration of the North American Forest-Flora according to Districts and Species; (VIII.) The Behavior of Exotic Species in North America; (IX.) North American Species from the Standpoint of their Fitness for Cultivation in Europe and especially in Germany, and (X.) from the Standpoint of their Economic Value to the German Forest; (XI.) Scheme for the Planting and Treatment of North American Species as Trees of the German Forest. The work then concludes with a twelfth section or appendix, in which we find information upon the anatomical characteristics of the woods of our conifers; a scheme for the arrangement of Pines (including non-American) according to Natural Sections; tables for the identification of the more important *Cupressineæ* by their young branches and cones, and of the North American Pines by their seeds; a description of the vegetable parasites observed on our forest-trees during the late autumn of 1885 and of 1887; a list of firms from whom the seeds of American forest-trees may be obtained; and a few notes and errata.

Two schemes were open to the writer of a book covering this ground. He might have adopted what we may call a scientific scheme, taking up each species of tree in botanical order and arranging under a single heading all the information he had to give with regard to it. Such a scheme would have been more attractive to the student and lover of trees in themselves, would have avoided the many repetitions and cross references which now increase the bulk of the volume, and would, we think, have been more easily serviceable to the European forester. But, on the other hand, the method Dr. Mayr has in fact adopted gives what the other scheme would not have given—complete pictures of the forest-flora of our different zones of vegetation. Such pictures the reader would otherwise have had to compile in his mind from a multitude of isolated passages. Now what he has thus to compile is the author's information and opinion with regard to any given species which may specially interest him. The scientific student might have preferred the botanical arrangement; but to the general reader, in any part of the world, the actual one will undoubtedly be more attractive. Nor, in his case, are the

repetitions it involves to be regretted. The more important facts are insisted upon, and the more often they are re-told with varying words, the more likely they are to impress the mind of any but a serious student.

And there are innumerable facts and conclusions and counsels in this book with which it would greatly profit the general reader in America to become thoroughly familiar. Nowhere have we read a fuller, clearer or better emphasized account of the damage which has already been done to our forests, which is still being done, and which threatens to continue until there is nothing more to damage; and nowhere a more judicious statement of the certain consequences of its persistence or of the methods which should be adopted to stay it. To a German trained in forest-conservation, the scenes now presented by our woodlands, and the scenes they suggest to an imagination which looks even fifty years ahead, may well have seemed as incomprehensible as horrifying. It is in truth a tragic panorama, and Dr. Mayr paints it in words which, while carefully based on actual facts and never falling into hyperbole or mere declamation, are of tragic intensity. As we read the chapter with the seemingly peaceful heading, "General Condition of the North American Forests," we seem to be assisting at a reckless, senseless conflict at once murderous and suicidal. We see a people, now the richest in the world, which, for the sake of a little more immediate wealth—or often for the sake of nothing but mere destruction—is sweeping away the most magnificent of Nature's gifts, and one that can never be replaced, is hopelessly ruining the aspect of vast areas of beautiful country, and at the same time is working with frightful celerity for its own ultimate impoverishment. Most of the facts and figures and descriptions which Dr. Mayr gives in drawing this general picture have long been painfully apparent to a few Americans, and have often been reiterated by them to the deaf ears of their countrymen at large. But as here massed together, as they appeared to a fresh and sagacious eye, they gain a new significance and stand out in even darker colors. It seems as though, could this chapter be translated and spread abroad in a million copies or so, the whole people would rise in a horrified awakening and make an appeal for self-preservation which even the dullest legislative body could not resist. To quote anything he says would be useless here; our readers, we trust, already stand at Dr. Mayr's point of view; and, we repeat, it is the massing of his facts which gives them their singular vividness. It would be painful to think of the spectacle we must present, as thus reported, in the eyes of German readers, were not the practical bearing of the matter on our own future so vital that room is not left for any minor sting.

It should not be supposed, however, that Dr. Mayr writes in an unfriendly or even unsympathetic spirit. As he never speaks without facts, so he never exaggerates in drawing conclusions. He is quick to note all possible excuses which may be made or fancied for our madness, even to the fact that we are so largely the offspring of that English race which lives in a little level world where forests do not exist and the need of them is not felt; and he is diligent in recording all the little public efforts that have been made in the way of reform, and all the private enterprises which indicate that there are individuals among us who know the truth and are anxious that it should be impressed upon the people at large. He praises the Arnold Arboretum heartily; and his appreciation of the Jesup Collection of Woods in the Museum of Natural History in this city will go far to prove to its donator and the officials of the institution that their work has been well done. He describes the scope and arrangement of the collection, notes the giant dimensions of some of the specimens, and says, "Certainly nothing has been spared in securing them; such colossal specimens can be shown by no other museum in the world." And, of course, he appreciates the fact that this collection, the dendrological herbarium at Brookline and the neighboring Arnold Arboretum each gains in value by the complementary usefulness of the others.

Yet, after making all possible deductions from the picture of blind ravage which he draws, we can fancy Dr. Mayr laying down his pen with a sigh of despair—so few and small are the bright spots, so alarming is the blackness of the picture as a whole. Some day, of course, as he says and we all know, there will come enlightenment and reform. But how much unavailing remorse will mingle with them, even though they come very soon; and is it not possible that they will come when practically too late? It is impossible to calculate, says our unwilling critic, whether complete forest-destruction, such as we see in the Holy Land and in certain parts of southern Europe, will be reached in fifty years, should our present methods continue, or will need a couple of decades more. When he adds, it is unfortunately improbable that within the next few decades our country will be so far advanced as to take "systematic care of its magnificent forest-treasures," the suggested prospect may well excite alarm. No passages in his book, by the way, are more interesting and instructive than those which show why, when the primeval forest is destroyed, it can never be replaced by man or renew itself in man's vicinity; but these we reserve for full translation at another time. We must once more explain, however, Dr. Mayr's exact attitude. He is not an enthusiast, who, in his love for the forest, forgets the needs or the right desires of man. He does not ask that everywhere the forest shall be preserved, nor make the beauty of the landscape the prime reason for its protection. On all arable low lands, he explicitly says, the forests should and must be cut away; and their preservation in the mountains he shows of course to be as truly in the interests of man as in those of the trees themselves.

Correspondence.

Why Not Legislate Against the Black Knot?

To the Editor of Garden and Forest:

Sir.—There are some good reasons for legislating against the Black Knot (*Plowrightia morbosa*) of the Plum and Cherry trees. In the first place the fungus is beyond question extremely destructive; whole orchards of large size in many parts of the country have been abandoned because of this parasitic plague. Secondly, it is a conspicuous disease and during the half of the year when the trees are defoliated the knots can be found without the least difficulty. Any attempts to shield the trouble, on the part of the owner, would be fruitless even if he should care to preserve the curse. In the third place, the remedy is the very heroic one of the knife, and easily, safely and with certainty applied. There may be some compounds put upon the diseased parts that will kill the fungus, but it is so deeply seated that when a twig is thoroughly infested there is little left for the fruit grower to do but cut away and burn the black excrescences. If a tree is badly attacked the wisest method is to cut down bodily and destroy it by fire. Finally when once the old knots are cleared out it will be an easy matter to keep the fungus from gaining a fresh foothold.

There are many trees which are literally covered with knots and have been for years; trees which bear no fruit, and never will, and they are worse than mere monuments of carelessness, for they propagate and perpetuate a disease that renders Plum-raising almost an impossibility in their neighborhood. Sometimes these old distorted trees are upon the roadside where any passing lad can pull off and carry to his own home one of these malformations to become a new center of infection. But these knots do not need to be transported to produce infection, for the millions of spores developed in the spring, while too small to be seen, pass long distances with the winds and thus spread the disease.

There are several fungus diseases against which the state legislatures or the national congress might pass enactments fully as wholesome and beneficial as those for the control of the diseases of animals, but few of them offer so many favorable points for successful legislation as the Black Knot—the scourge of Plum and Cherry growers in many localities. The law should include, to be effective, all Wild Plum and Cherry trees that are breeding places of the pest.

Rutgers College. *Byron D. Halsted.*

Public Forest Associations.

To the Editor of Garden and Forest:

Sir.—Apropos of the plans for saving the Waverly Oaks, I should like to urge again a general proposition for the accomplishment of public purposes of this kind, which was broached some months ago in another place, and which seems to me entirely practicable. It is that there shall be organized and chartered in the State of Massachusetts a public forest association, whose principal object—no doubt it would be well to make it its only object—would be the acquisition of the title to tracts or lots of land which, from their natural beauty or picturesque significance, or from the fact that they include trees or plants which are of historical or botanical importance, it is desirable to preserve for the public benefit.

Such an association, if established in the proper way, could hardly lack members; and the means necessary for purchases, provided the power to condemn land was not given to it, could be obtained through subscriptions from time to time, or

through endowments which the wealthy would surely provide when such a work had attained the repute and honor which it would deserve.

The model of such an association is found in the Lynn Public Forest Association, whose work, thanks to the acquisition of nearly the whole of the great Lynn Woods by the City of Lynn, is now rendered unnecessary, or, rather, adequately crowned; for the creation of the magnificent Lynn park of about 1,200 acres is really the outcome of the work of this Society. It was this body which succeeded in checking the destruction of the beautiful Hemlock timber in the deep glen on Penny Brook, and which rescued several other sylvan spots in the same neighborhood from profanation simply by buying out the profaners. And the public spirit which its work stimulated no doubt made possible the reservation of so splendid a domain for public use in perpetuity.

Apply the principle, so successful in one small city, to the commonwealth, to any state or to the nation. Let public-spirited men and women unite in such an association, and seek charter and authority to acquire property under proper restrictions. I know of no cause in which the power of eminent domain could be invoked more righteously than in protecting from private destruction the exceptional and striking natural beauties which are equally dear to all, or in preserving the groves or trees around which the people's history or legends cluster. But even if such an association had not authority to acquire property by condemnation, the possession of a considerable emergency fund, accumulated in advance and ready to be judiciously drawn upon at once by alert men, would in a great number of cases prevent the defacement of scenery, or the destruction of woods or individual trees which centuries could not replace.

The best work that has ever been done in this country, in the way of reform and public enlightenment and education, has been at least put in motion, if not completely accomplished, by private effort represented in associations. It seems to be almost idle to try to get Congress or Legislatures to do anything toward saving the great forest-domains. But is it not possible to make use of the great instrumentality of voluntary association to save the spared monuments of a sylvan past still remaining to us?

Boston. *J. E. Chamberlin.*

The Rest of Plants.

To the Editor of Garden and Forest:

Sir.—1. Do all plants have, or require, an annual "rest-period"? If so, how much is meant by that term?

2. Is it true of all the ordinary window-plants, such as Geraniums, Fuchsias, Gloxinias, Shrubby Begonias, etc., that they require a season of retirement, or letting alone, in some part of the year?

3. Can any general rules or directions be given for thus "resting" plants which will be of service to the amateur window-gardener; or must one know the habits, the natural rest-season, of each plant or species?

4. Can you name any work or article already in print which treats of this subject in any detailed way?

Whitewater, Wis. *A. S.*

1. So far as I know, all perennial plants undergo a period of "rest." It is not certain, however, that this "rest" is in any sense a recuperation or recreation to the plant. It appears to be a hereditary trait, induced by natural environment, a means by which the plant resists untoward circumstances of climate. These untoward circumstances in nature are variations in temperature or moisture, or both. In the dry seasons of the tropics plants "rest" in much the same manner as in northern winters. Any attempt in culture to overcome the "resting-period" is apt to injure the plant, from the fact that any energy used in the partial or abnormal development may be subtracted from subsequent growth or development.

2. I know of no investigations to show that this hereditary trait of plants has ever been entirely overcome by culture. Our window-plants still demand "rest."

3. In practice, however, it is in every way more desirable to start ordinary window-plants anew every year than to attempt to handle old ones. Young plants are vigorous, healthy, floriferous and economical of space. Started in late winter or in spring, they will bloom the following winter, after which they should be discarded. But if old plants are retained, I cannot state any general rule for "resting" which will apply, with any value, to all kinds.

4. The best literature of the practical application of the "resting-period" to plants is found under the discussions of the various species, in garden manuals. *L. H. Bailey.*

The Cork-wings on the Sweet Gum.

To the Editor of Garden and Forest:

Sir.—The Sweet Gum, *Liquidambar Styraciflua*, which, from its handsome habit of growth and rich autumnal coloring, has been extensively planted in Tower Grove Park, in this city, shows a good deal of variability in the development of "cork-wings" on its branches—a development for which it is noted, and which has received considerable attention from histologists, one of the latest of whom, Miss E. L. Gregory, has given an extended account of it in the *Botanical Gazette* for 1888 and 1889.

While it appears to be the rule for the branches to bear two or more prominent wings on their upper side (this position, according to Miss Gregory, being peculiar to this species), it is noticeable that not far from one-half of the trees in the park named are destitute of such wings, while a few others possess few of them. The trees compared are of the same age, have grown under similar conditions, and no observable reason for the difference noted is to be seen, the winged and wingless specimens occurring with no regularity. These trees are now about seventeen years old, and the difference referred to appears to depend upon inherent peculiarities of the individuals, since the smooth trees have always been destitute of wings, while these appendages were early developed in the others. The different appearance of the two sorts of trees is very striking when the leaves are off in winter. It is quite as evident in considerably larger and older trees than those illustrated.

Botanic Garden, St. Louis. *Wm. Trelease.*

[Photographs which accompanied this letter clearly show the differences described by Professor Trelease.—Ed.]

Gordonia Altamaha.

To the Editor of Garden and Forest:

Sir.—The best specimen of *Gordonia Altamaha* in the District of Columbia grows in Lafayette Square, in front of the White House. The tree, or rather large shrub, which is in vigorous health, is nearly, or quite, twenty feet high and ten feet through. I supplied this as a small plant about the year 1855. It grows and flowers freely, and has not been injured by cold. There are few, if any, other specimens about the city, except those growing on my nursery grounds, on a dry, rich bottom land, where they grow and flourish with great vigor. They pass through ordinary winters without harm, but in one severe season the young growths were killed. The plants, however, all quickly recovered.

I doubt whether this Gordonia will succeed much farther north, unless planted in a warm, sheltered position. I know of no other tree or shrub, that blooms at the same season, which can compare with it in beauty. Its pure white flowers are produced in July, and appear abundantly up to October, and even on till the middle of that month. The foliage assumes, in autumn, a rich crimson tint, which is quite distinct and striking.

Washington, D. C. *John Saul.*

Notes.

The Maples growing in the gulches on the western slope of the Sierra Nevada have been tapped this year, and although they do not yield such an abundant flow as the Sugar Maple, the sap is said to be sweeter and makes finely-flavored sugar.

It is said that no less than 7,769 school-gardens exist in Austria, not including the sister kingdom of Hungary. They are connected with both private and public schools, are used for purposes of practical instruction in horticulture and tree-growing, and often contain botanical museums and bee-hives.

One of the most interesting flowers we have seen this spring is the white Chionodoxa, which Mr. Gerard has grown from bulbs sent to him last autumn from Asia Minor, by Mr. Whittall. The color is pure and the flowers are held well up above the foliage. Mingled with the deep blue of the ordinary kind the effect will be very beautiful. White flowers of this class, too, are rare after the Snowdrops are over. These plants are very rare in their native home, and Mr. Gerard's experiments to ascertain whether they will come true from seed will be watched with interest.

Another instance of the way in which our florists now devote themselves, very often, to raising large quantities of a single kind of flower is found in a note, dated Springfield, Massachusetts, which was recently published in the *American Florist*. "I grow Carnations only," said the writer, "and last season I cut 26,000 blooms from 700 plants of Grace Wilder. I now have 1,300 plants."

A lady who read a paper at the meeting of the American Horticultural Society, which was held in February at Austin, Texas, recommended that the effort to agree upon a "national flower" should be abandoned; but that instead each state should select a flower for itself. Thus far the advice seems good enough, if, indeed, the subject has any real hold on popular interest. But when we are told, furthermore, that on occasions of national significance all these "state flowers" may be massed in a great bouquet or garland, the picture presented to the imagination is not very agreeable.

German horticultural papers speak highly of a variety of *Begonia florida incomparabilis* which has been named "Hofgärtner Pettera" after its introducer, the gardener of Duke Philip of Wurtemberg, at Gmünden. The flowers, which are dark carmine, "completely cover the plant;" but its great peculiarity is the color of the leaves, which, when exposed to full sunshine, "become a deep blood-red, while the stem and leaf-stalks are coral-red." It is recommended as a valuable addition to the plants now used for carpet-bedding and for multicolored groups.

A peculiarity of the plants producing what we call gourds or calabashes is the musk-like odor that most of them give out when their leaves are pinched. We generally look upon a gourd as something unsuitable for the table; but Dr. Harris states that when cooked several of the varieties of Syria, Japan and Brazil are quite palatable while young, especially those which grow long, thin and green, like the Hercules Club. The fruit which furnishes the reticulated skeleton used as a bathing-scrubber and in making beautiful bonnets is in habit and growth a Cucumber (*Cucumis reticulatus*), although sometimes called a "Dish-cloth Gourd" from one of its uses in our Gulf States. In India the natives eat one of the varieties when quite young; but of a dozen varieties grown by Dr. Harris in Philadelphia none were tempting to the appetite.

A corporation called "The Blue Mountain Forest Park Association" has been formed at Newport, New Hampshire, its President being Mr. Austin Corbin, of this city, whose summer home lies in that region. The purposes of the Association are to breed American game and fish, to cultivate and properly administer the forests, and to form and beautify parks and avenues. Seventeen head of buffalo have been turned out on a "range" which embraces about 10,000 acres, and it is hoped that the race may thus be preserved from extinction. The good done by such an association, however, will spread far beyond its own property, for it will doubtless incite the citizens of other localities to imitation, and must help to prove to the people at large that our forests are worth preserving, and that the adornment of country neighborhoods should be systematically undertaken.

We have received the first number of *Zoe*, a new biological journal to be published monthly in San Francisco. It is intended as a "medium for recording in accessible form the numerous, often unconnected observations, pertaining more particularly to the western part of North America, made by amateurs as well as by working naturalists." The name of the editor does not appear in the prospectus, but contributions are promised, and many of the promises are fulfilled in the first number, by articles from many of the best known naturalists of the Pacific States. The first number contains botanical notes by both Mr. and Mrs. T. S. Brandegee, and the first of a series of important articles on the naturalized plants of southern California, by Mr. S. B. Parish. *Zoe* is in magazine form, in octavo, and the first number contains thirty-two handsomely printed pages. It is published by the Zoe Publishing Co., of San Francisco, and the annual subscription is two dollars.

One of the most perfect trees in the United States stands behind the old Drayton Manor House on the Ashley River, not very far from Charleston, South Carolina. It is a Live Oak. The trunk girths, at five feet from the ground, nearly twenty-five feet, and the main branches, which shoot out at right angles from the trunk at the height of ten feet above the ground, have a spread of one hundred and twenty and one hundred and thirty feet, and form a dense, symmetrical, flat head of indescribable beauty and impressiveness. There are larger Live Oaks to be seen, but it is rare to find one of the age and size of the Drayton tree of such perfect shape and in such good health. There is nothing about the tree to indicate very great age, and as it is a well known fact that the Live Oak grows in good soil with extreme rapidity, it is not improbable that the two centuries during which the Drayton family have occupied the Manor House may cover the span of its existence.

Writing on "The Slave Trade in the Congo Basin," in the April number of the *Century Magazine*, Mr. E. J. Glave says that nature has, in the case of the African, met the universal desire for a drink stronger than water by providing him with the juice of the Palm-tree, "a most palatable beverage, resembling when fresh a very strong lemon soda, but intoxicating in its effects. . . . The villagers in charge of this particular industry climb the tree, trim away some of the leaves, and then bore three or four holes, about half an inch in diameter, at the base of the frond, to the heart of the tree." A small gourd is placed beneath each of these holes, and receives during the day about half a pint of juice. "The contents of these gourds are collected every morning. This beverage is called by the natives *malafu*, and is well known to all European travelers as Palm-wine." From the author's accounts of the drunken revels which he witnessed, it seems to be as potent, in its ultimate effects, as the most civilized of fermented drinks.

Odontoglossum Pescatorei is the rival of *O. crispum* as a garden Orchid. In their cultural requirements and in general habit they are alike, whilst in attractiveness there is little to choose between them. Both species have revealed under cultivation an extraordinary range in the size, form and marking of their flowers. Now and again a variety of startling character appears, and if placed in the market fetches a sensational price, as, for example, Veitchs' variety of *O. crispum* and Veitchs' variety of *O. Pescatorei*, both of which are in Baron Schroëder's famous collection. The last sensational feat has been the production of an inflorescence by *O. Pescatorei*, upon which no less than 130 blooms were borne! The length of the panicle was four and a half feet, or more than double the maximum length given in Veitchs' *Orchid Manual*. It bore fourteen branches, which again ramified. The plant must be of extraordinary vigor, as its pseudo-bulbs are described as being as large as large hens' eggs. It is in the collection of Mr. J. B. Merriles, Reading, and was grown by his gardener, George Russell.

We have received from Mr. O. C. Simonds, Superintendent of Graceland Cemetery, Chicago, a series of photographs illustrating the method of transplanting large trees. Of two trees moved together the larger was sixty feet high, with a spread of branches of sixty feet. The roots were taken up in a circle of about the same diameter, tied up in bundles, wrapped in canvas and kept moist. The trees measure respectively seven feet three inches and six feet in circumference, the measurements being taken at three feet above the ground. The earth was retained about the roots for some distance from the trees, which were moved in an upright position. The planting was completed on the 4th of May, 1889. The trees grew nicely during last season, and Mr. Simonds believes they will become as firmly established as they were in the woods from which they were taken, although it is yet too early to speak with entire confidence as to the result. The trees were moved on rollers nearly a mile in an upright position, stayed upon a heavy frame-work of timber, and the cost was between five and six hundred dollars.

According to a correspondent of *Gartenflora*, the splendid crops of Hyacinths which are grown in the vicinity of Haarlem, in Holland, require a careful preparation of the soil. A field which the following autumn is to be planted with bulbs is worked over during the winter to a depth of three feet, in order that the upper soil, in which bulbs have already been grown, may be thoroughly replaced by fresh sand; for it is almost pure sand which forms these fields along the dunes. Simple cow-manure is then applied, and Potatoes are planted, and after these are harvested the soil is again worked over. About the beginning of September the bulbs are planted and covered with a layer of sea-weed, which is removed early in the spring. The yellowish leaves which have sprouted under the mulch quickly turn a deep green, and by the middle of April the flowers spread their immense many-colored carpet before the eye. As soon as they begin to fade they are cut off to direct all the strength of the plant toward maturing the bulbs. Formerly the cut flowers were sold, largely for the English market; but this sale so injured the demand for bulbs that, by agreement among the growers, it has been abandoned.